

**Final Assessment Test – November 2024**

Course: TBIT202L - Microbiology

Class NBR(s): 4114 / 4118

Time: Three Hours

Slot: C1+TC1

Max. Marks: 100

- KEEPING MOBILE PHONE/ANY ELECTRONIC GADGETS, EVEN IN 'OFF' POSITION IS TREATED AS EXAM MALPRACTICE
- DON'T WRITE ANYTHING ON THE QUESTION PAPER

Answer ALL Questions

(10 X 10 = 100 Marks)

- 1.a) The two major milestones in Microbiology are the germ theory of fermentation and the discovery of first specific live attenuated vaccine. Name the scientist/s and narrate the incidents that led to these two milestones.

OR

- 1.b) This layer exclusively present in Gram negative bacteria is responsible for their toxicity. Critically analyse the major structural features of this layer with a neat diagram.
- 2.a) Which type of microscope is best suited to visualize unstained natural samples? With appropriate illustration and discuss how the fine contrast is achieved between the background and the specimen?

OR

- 2.b) Which culture method/s is/are appropriate for the following? Justify your answer.
- i). Bacteriophage typing
 - ii). TSI test
 - iii). Motility test
 - iv). Blood culture
3. TSI results of 4 bacterial strains are given below. Interpret the results and give an example for the bacterial sp.
- a). A/AG; no black precipitate
 - b). K/A; black precipitate
 - c). K/A; no black precipitate
 - d). K/K; growth observed on slant
4. Explore the ecological role/s of various nutritional types of microorganisms.
5. Evaluate the different methods used in the measurement of microbial growth with their merits and demerits.
6. What is the ancient fermentation known to mankind? Sketch its fermentation pathway neatly. Add a note on the production strains used at present in industries.

7. Discuss the various methods employed in the cultivation of viruses with their merits and demerits.
8. Review the non-immunological viral assays that were used traditionally to detect viruses.
9. Describe the mode of action of various antibiotics that interfere with cell wall biosynthesis in susceptible bacteria with a neat illustration.
10. Write a detailed note on the various virulent factors produced by pathogenic bacteria to establish their pathogenesis in susceptible host.

⇔⇔⇔ BI/K/TX ⇔⇔⇔